

# Bulletin

## People Survive Disasters — Are You Prepared to Survive?

By Terry R. Simmonds

Disasters usually happen with little or no warning. Essential services may be disrupted and first responders and disaster relief organizations may not be able to reach you right away. Are you and your family prepared to be self-sustaining for at least 72 hours?

### Prepare — Know the Types of Disasters That May Happen

Find out what types of natural disasters are most likely to occur in your state and community. Learn if hazardous materials are stored, manufactured, or transported near your community. In order to prepare for and respond to disasters, contact your Local Emergency Management Office for information and to find out what steps you should take.

Talk to school officials about their emergency plans, since disasters may separate you from your children for an extended period of time. Ask school officials if they are prepared to take care of your children for at least 72 hours if members of your family are unable to pick them up. What can you do to help the school to be better prepared.

### Prepare — Do an Emergency Plan For You and Your Family

Meet with family members and discuss the need for preparing for disasters. Plan how your family will stay in contact if you are separated. Identify a safe place outside your home if you have to evacuate your home. Identify a second location away from your home in case you are unable to reach your home. Pick a friend or relative out of state that family members can call if separated. Long distance telephone calls may be easier to make than local calls during a natural disaster.

Determine at least two escape routes from each room of your home or office. Post emergency telephone numbers by each phone and teach children how and when to call 911 for help. Show responsible persons in your household how and when to shut off water, gas, and electricity at the main valves and boxes.

Take a Red Cross first aid and CPR class. Consider how you can help your neighbors or coworkers who may need special assistance, such as infants, the elderly, or people with disabilities. Make arrangements for your pets.

*Continued on page 6*



The Northwest Technology  
Transfer Center  
TransAid-WSDOT

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## Editor's Column

I was reading the June issue of "Technology Development News" of the Western Federal Lands Highway Division of FHWA. Besides some articles on technology, some of which are included in this issue of the "Bulletin," there was a quote by Theodore Roosevelt. His words are as valid today as they were 90 years ago and, I believe, may be useful to you, the reader, in your daily life.

*"It is not the critic that counts, not the man who points out how the strong man stumbled; or where the doer of deeds could have done better. The credit belongs to the man who is actually in the arena! Whose face is marred by dust and sweat and blood; who strives valiantly, who errs and comes up short again and again; who knows great enthusiasm and great devotions, and spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at worst if he fails, at least fails while daring greatly; so that his place shall never be with those cold and timid souls who know neither victory nor defeat."*

Theodore Roosevelt

Thanks to Fred Rogers of FHWA for this vibrant quote by Mr. Roosevelt.

## Applying for Grants — Some Helpful Hints

Have you been successful in these? If not, perhaps the following checklist of why proposals are turned down will help you to be more successful with your applications.

### *Twelve Reasons Why Proposals are Turned Down*

1. The proposal does not match the objectives of the funding source.
2. The proposal is strong on idea, but lacks detail.
3. The objectives are too ambitious in scope and it is not clear how they can be implemented.
4. The proposal fails to strike the reviewers as significant.
5. The proposal is poorly written and hard to understand.
6. The reviewers do not know the capabilities of the applicants.
7. It is not clear who is going to benefit.
8. There is no evidence that the key people involved have been contacted and have committed themselves.
9. The proposal fails to show that the applicant is aware of what others are doing in the same area.
10. The budget is beyond the range of funding available from the funding source.
11. The funds requested do not relate directly to the objectives.
12. The writer did not follow the format provided by the funding source. ☐

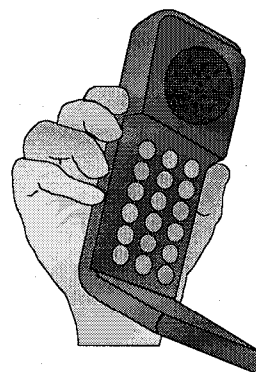
Source: Van Duym, Washington Commission for the Humanities, 1045 Cherry Street #314, Seattle, Washington 98104.

# Tennessee Starts Emergency Call-In Service

Representatives from the FHWA's Tennessee Division Office, the Tennessee State Senate, Tennessee DOT, Tennessee Department of Safety, and cellular phone companies throughout the state met recently to finalize details of a highway emergency call-in system that has been under development for more than a year. All of the nine cellular phone companies in Tennessee have agreed to provide free, emergency call-in service to customers reporting accidents, drunk drivers, or other highway emergencies. The calls will be routed to the nearest Highway Patrol office. This system is expected to drastically reduce response time to accidents and, thereby, save lives, minimize congestion, and prevent secondary accidents. The only cost to the public is approximately

\$40,000 to install signs advertising the system along the major routes in the state. □

*Source: Public Roads, Summer 1995*



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## CERF Lists Most Urgent Public Works Issues

The Civil Engineering Research Foundation (CERF), affiliated with the American Society of Civil Engineers, surveyed 800 municipal officials nationwide to compile a list of the most urgent public works issues. The survey was the first step of a five-step technology transfer process to bring infrastructure-related technology developed in federal

laboratories to the nation's public works community. The five-step process — needs assessment, technology matching, market potential evaluation, partner identification, and implementation demonstration — was developed jointly by CERF, the U.S. Army Corps of Engineers, FHWA, EPA, and the Bureau of Reclamation.

### *CERF's 16 Most Urgent Public Works Issues*

- |       |  |       |                                     |
|-------|--|-------|-------------------------------------|
| No. 1 | Pavement maintenance and repair.   | No. 9 | Waste composting.                   |
| No. 2 | Compliance with Americans with Disabilities Act.                         | No.10 | Asphalt performance.                |
| No. 3 | Wastewater collection systems repair.                                    | No.11 | Pavement inspection and management. |
| No. 4 | Residential solid waste collection management.                           | No.12 | Bridge maintenance and repair.      |
| No. 5 | Building system maintenance.   | No.13 | Hazardous waste recycling.          |
| No. 6 | Construction site safety.  | No.14 | Solid waste separation techniques.  |
| No. 7 | Road drainage.   | No.15 | Road markings and signs.            |
| No. 8 | Stormwater (National Pollutant Discharge Elimination System compliance). | No.16 | Hazardous waste worker safety. □    |

*Source: Public Roads, Summer 1995*

# In the News



## NCHRP Projects Selected for 1996

The American Association of State Highway and Transportation Officials' Standing Committee on Research met in Washington, D.C., on March 21 and 22, 1995, and selected new projects for the National Cooperative Highway Research Program in fiscal year 1996.

Projects that may have an interest by local agencies are the following:

- 1-35 Quantifying Life-Cycle Cost Benefits of Pavement Designs Incorporating Geotextiles as Separators
- 3-56 Systemwide Impact of Safety and Traffic Operation Design and Decisions for Resurfacing, Restoration, or Rehabilitation (RRR) Projects
- 4-23 Aggregate Tests Related to Performance of Unbound Pavement Layers
- 9-9 Refinement of SHRP Gyratory Compaction Technique
- 9-10 Applicability of SHRP Binder Tests and SUPERPAVE to Mixtures Containing Modified Asphalt Binders
- 10-48 Study of Distress Data and Pavement Deflection Data to Determine Pavement Layer Characteristics
- 10-51 Performance-Related Tests for Elastomeric Bridge Bearings
- 12-43 Life-Cycle Cost Analysis of Bridges
- 12-44 Standard Specifications for Moveable Highway Bridges
- 12-45 Development and Verification of Design Criteria and Specifications for Flexible and Rigid Large-Span Culverts
- 22-13 Performance of Roadside Barriers
- 25-12 Evaluation and Development of a Modified Wet Detention Pond as a Management Practice for Control of Highway Runoff Pollution and a Comparison to Traditional Dry Ponds □

*Adopted From: TR News 178, May-June 1995*



## FHWA Awards Major Contracts for ITS

The Federal Highway Administration has selected Rockwell International Corporation and Loral Federal Systems to carry out Phase II of the Intelligent Transportation Systems Architecture Development Program. During Phase I of the federal ITS project, an architecture was proposed to support information sharing among ITS user services including route guidance, personalized traveler information, intersection collision avoidance, commercial fleet management, and emergency services. During Phase II, the two companies will collaborate to define a national architecture that will promote nationwide compatibility across a variety of transportation systems and will also be open and flexible enough to allow local and state agencies to integrate their ITS facilities into the national ITS system. The proposed ITS architecture will benefit all users, including mass transit passengers, motorists, those involved in the movement of people and goods, and emergency services providers, according to Jeff Brady, Vice President of Rockwell's Transportation Systems business. □

*Source: TR News 178, May-June 1995*



## Critical Safety Elements for Design Studied

Accident data have traditionally been the basis for safety decisions in the highway-design process. Unfortunately accident data are often fragmented, incomplete, or incorrect. There is a need for more uniformity in design-related data elements on accident-reporting forms, more guidance on the use and linkage of supplemental data sources, and greater accuracy in the information gathered.

The Traffic Institute and Ch2M Hill, Inc., have been awarded a \$200,000, 18-month contract (NCHRP Project 17-12, fiscal year 1995) to define the critical safety information needed to support project- and policy-level decision making in highway design and to develop the fundamental architecture for systems to acquire, store, access, and use safety information in highway design. □

*Source: TR News 178, May-June 1995*

# In the News (contd.)



## Transportation Research Information Hotline Started

TransNow has recently created The Transportation Research Information Hotline (TRIHline), an easy-to-use service for anyone seeking up-to-date information on transportation facts and issues. The TRIHline (pronounced "try" line) serves transportation researchers, students, agency personnel, private firms, and the public.

The TRIHline taps these resources:

- Transportation professors and researchers at the University of Washington, TransNow's consortium universities, and other University Transportation Centers.
- Experts from government agencies and private firms.
- Libraries at the University of Washington and elsewhere.
- The Internet (WWW).
- Regional and national newspapers and newsletters.

Staff will research and answer questions utilizing the above resources, or provide a contact from the TRIHline's list of experts who can best answer the caller's question. All inquiries are handled within the shortest time frame possible (usually two to three days) and answered via e-mail, fax, mail, or phone contact. This service is available Monday through Friday, 8:00 a.m. to 5:00 p.m. (PST).

Telephone: (206) 616-1088

Fax: (206) 543-5965

Internet: trihline@u.washington.edu

Address: Transportation Northwest (TransNow)  
135 More Hall  
University of Washington  
Box 352700  
Seattle, WA 98195



## ITE Supports T<sup>2</sup>

The Institute of Transportation Engineers has submitted a series of letters and issue papers to key members of Congress and the Clinton administration. The Institute recommends that during 1995, Congress and the administration:

- 1 Pass legislation designating the National Highway System;
- 2 Remove the transportation trust funds from the unified federal budget;
- 3 Maintain the viability of the U.S. Highway Trust Fund by continuing to limit its expenditures to highway and transit programs;
- 4 Provide funding for transportation programs at levels commensurate with those authorized in the ISTEA;
- 5 Provide strong funding support for research, operations tests and a national architecture that is necessary to lay the foundation for deployment of ITS;
- 6 Provide strong funding support for national transportation research and development programs; and
- 7 Strengthen federal programs that help provide transportation education, training and technology transfer.

Source: ITE Journal, April 1995



## New T<sup>2</sup> Resource — Retired Professionals

The T<sup>2</sup> Center is offering a new resource for public agencies — a listing of retired transportation engineers and technicians who have expressed interest in helping local agencies. A computer data bank will be created from information received from interested retired individuals. An agency can contact the T<sup>2</sup> Center for a listing of individuals expressing interest in a particular area of work, location, or time. The agency and the individuals are then responsible for finalizing employment agreements between them.

A retiree or potential retiree who may be interested in this new program can contact our Training Coordinator at (360) 705-7477 for details.

## Prepare — Obtain Emergency Supplies

### Water, Food, and Utensils

One gallon of water is needed for each person per day for drinking, cooking, washing, and sanitation. Store as much water as possible in non-breakable containers. Do not use milk jugs or a container that has held toxic substances. Use water purifying tablets, 2 percent tincture of iodine or household bleach (hypochlorite type only), four drops of bleach per quart of water and stir or shake. Store in a cool dark place.

Use food in the refrigerator first, then items in the freezer, and canned goods last. If you plan on buying food for emergency purposes, buy non-perishables needing little or no cooking; high nutrition-type. Get special dietary foods as needed by household members.

Obtain non-breakable eating and drinking utensils, bottle and manual can openers.

A heating source is also needed such as a camp stove or canned heat stove, with extra fuel.

### Communication, Lighting, Safety

Get a battery-operated radio, flashlight, candles; extra batteries; lantern and fuel, matches (in waterproof container); a distress flag; fire extinguisher; work gloves, shovel and a crow bar.

You may want to purchase a Citizen's Band radio for two-way communications.

### Clothing and Bedding

One complete change of clothing is needed for each person appropriate for the season and weather conditions. It is better to layer clothing than to have one large item. Suggestions are: work clothes; sturdy shoes; extra socks and underwear; rain gear and boots. Plan for a sleeping bag or two blankets per person with pillows.

### Personal Items

For comfort and personal hygiene, the following are the "bare" essentials:

Washcloth and towels; soap, toothbrushes, toothpaste, deodorant; hair care items; sanitary napkins and tampons; shaving kit; contact lens solution; blankets.

Reading and writing materials, family photos, small toys for children. Sewing kit, mirror, insect repellent, and insecticide.

Paper towels, toilet paper, liquid detergent, disinfectant, garbage can or bucket with tight-fitting lid (for emergency toilet), plastic garbage bags (for lining toilet).

Get special supplies as needed, e.g., baby supplies; special medical needs for family members.

### First Aid Supplies

Keep these in a waterproof metal or plastic box and keep medicines tightly capped. Check periodically and replace any medication which has passed its expiration date. Basic medical supplies should include:

Adhesive tape rolls (2 inches wide), sterile applicator, cotton tips, antacid, antibiotic ointments, antiseptic solution, aspirin or aspirin substitute, baking soda, sterile bandage rolls (2 and 4 inches wide), large triangular bandages, bandage plastic strips, cotton balls, diarrhea medication, eye medication, first aid handbook, hot water bag, ice bag, iodine water purification tablets, isopropyl alcohol, laxatives. Spare eyeglasses, contact lens, hearing-aid batteries, medical alert tags for drug allergies and special health conditions, medicine dropper, tablets for nausea, non-prescription medicines, nose drops (water soluble), petroleum jelly, plastic bags with fasteners and labels, prescription medicines (as needed), safety pins — assorted sizes, scissors, smelling salts, antibacterial soap, wooden splints (18 inches long), table salt, toothache remedy, thermometer, tweezers.

### Papers and Valuables

Valuable papers and other items should be located in an accessible place so they can be obtained easily. These include:

Social security cards; birth certificates; marriage and death records, driver's licenses, cash and credit cards, wills, insurance policies, deeds, stocks and bonds, savings and checking account books; an inventory of household goods (photos or video tape preferred), small valuables — cameras, watches, jewelry, emergency public information; survival books; medical self-help books; other reading material.

\*A Family Emergency Preparedness Plan booklet is available from the T<sup>2</sup> office. See Publications page of this newsletter. □

(Mr. Simmonds is WSDOT's Emergency Management Program Manager.)

## Call for Abstracts

The Fifth National Conference on Transportation Solutions for Small and Medium-Sized Areas is being held in Greensboro, North Carolina on October 2-4, 1996. A call for abstracts is being made by TRB for this conference. Abstracts of papers should be submitted to TRB by November 30, 1995. The Conference Committee seeks quality papers or presentations on planning for urban areas of under 250,000 population. Final decisions on papers will be made at the January 1996 TRB meeting. Mail or fax your questions and/or abstracts to George L. Reed, P.E., Vice-President, URS Consultants, Inc., 124 Marriott Drive, Suite 201, Tallahassee, Florida, 32301. Fax (904) 942-4101.

## Warranty Clauses Revised

The Federal Highway Administration is revising its regulation that prohibits the use of guaranty and warranty clauses on federal-aid highway construction contracts. The revisions will allow greater use of warranties in projects within prescribed limits. The FHWA is seeking comments from the public on the interim final rule until October 24, 1995. The interim final rule is effective August 25, 1995.

*Source: August 25, 1995, Federal Register*

## Transportation Acronym Guide Available

This 60-page document by the U.S. Department of Transportation's (DOTs) Bureau of Transportation Statistics, compiles transportation and transportation-related acronyms used throughout DOT and other related U.S. government agencies. The acronyms are multimodal, and organized in alphabetical order. Each acronym has a definition and a source citation.

The report is available both as a printed document and on diskette as an executable file compatible with Windows 3.0 or higher. To receive a copy, send a self-addressed mailing label to the Bureau of Transportation Statistics, U.S. Department of Transportation, 400 Seventh Street SW, Room 2104, Washington, D.C. 20590. Please note the form in which you prefer to receive the document.

## Call for Papers — 1996 ITE District 6 Annual Meeting

**July 7-10, 1996, Fresno, California**

The Institute of Transportation Engineers is accepting abstracts to review for presentation at the 1996 District 6 Annual Meeting in Fresno, California. This is an opportunity for transportation professionals within the District 6 western states to share how they are *Facing New Challenges* in planning and design.

Abstracts must be received no later than January 6, 1996. Notification of acceptance will be made by March 3, 1996. Complete manuscripts from accepted abstracts are required by June 2, 1996, for inclusion in the 1996 Compendium of Technical Papers.

Abstracts should be no more than one page (300-500 words). Title, author(s), complete mailing address and telephone/fax numbers of the presenter/primary author must appear on the abstract. Six (6) copies of the abstract must be submitted.

Send six copies of the abstract by January 6, 1996 to: Michelle Bitner, Technical Program Chair, 1996 ITE District 6 Annual Meeting, PO Box 2807, Bakersfield, California. Phone (805) 861-2191. E-mail: cofcg@cybergate.com.

Possible topics could be: rural highway operations and research, management systems, transportation modeling innovations, advanced technologies, GIS applications, congestion management, intermodalism, integrating GIS and transportation models, land use and transportation, intelligent transportation systems, travel demand management, traffic operations and design, air quality management and issues.

*This is a list of possible subjects. There are no limits to these subjects. All abstracts will be considered.*



# Safer Winter Operations

by Harvey Kuester

Some parts of our state have severe conditions of snow and ice during a large part of the winter months while other parts have only sporadic snow and ice conditions intermixed with rain. On the other hand, the basic elements affecting winter driving and working conditions change very little from one winter to the next. Slippery surfaces, restricted visibilities, freezing temperatures, an overall increase in adverse weather conditions, all occur about the same time to about the same extent each year.

Let's review some of the driving and work habits that must be adjusted to cope with the hazards of winter so that we can get through the winter months without an accident.

## Vehicle Operation

**Time** — Give yourself plenty of extra time for getting to your destination. Speed limits are for perfect, dry conditions. On winter's icy roadways, driving half the speed limit may be suicidal.

**Vision** — No single item is more important to safe driving. Take the time necessary to clear all windows of snow, ice, or fog before starting out. Also, clear any snow off the hood; it comes loose when driving. Wear sunglasses if you are driving by day, and it is bright. Periodically, wash the inside as well as the outside of windows to reduce the film that accumulates.

**Lights** — Even though you can see, drive with low-beam headlights in snow, fog, or just winter murk. Keep all lenses free of dirt by wiping them periodically. Dirty headlights can cut

visibility by 50 percent or more. Don't forget the directional lights, taillights, and rotating lights.

**Tires** — Be sure your tires have adequate tread for traction in snow and to reduce risk of hydroplaning in rain or puddles on the road. You may hear that putting extra weight in the trunk or truck bed gives better traction. Traction might be helped a little but at the expense of steering control and longer stopping distances. The tradeoff isn't worth the risk.

Likewise, you may hear that reducing tire pressure is another way of increasing traction. Reducing air pressure will not give you more traction and your tires could become seriously underinflated. Underinflated tires also affect steering. Keep in mind that every time the outside temperature drops 10 degrees, the tire air pressure goes down about one pound per square inch. Remember, too, that underinflated tires are the major cause of tire failure.

**Ice** — At 30 degrees, ice is twice as slippery as it is at 0 degrees. It also forms first and lasts longer on bridges and in the shade. If you hit an unexpected patch, don't try to brake, accelerate, or downshift. Let up on your accelerator and let your vehicle "roll" through the slippery area.

**The Feel of the Road** — On snow, ice, or rain-slick roads, pay particular attention to tire traction. It's important that your tires do not lose traction with the road. When you feel this happening, reduce your speed accordingly.

**Skidding** — If you go into a skid, act quickly by taking your foot off the accelerator, keeping your foot off the

brake, and steering in the direction the rear of the vehicle is skidding. In other words, if you want your vehicle to go right, turn right. If you want it to go left, turn left.

Hold the steering wheel firmly, but don't make large turns. Use a light touch to correct the swerve.

**Braking** — The following braking technique is recommended by the National Safety Council for front and rear wheel drive vehicles with disc or drum brakes: Squeeze your brakes with a slow steady pressure until just before they lock. When you feel them start to lock, ease off until your wheels are rolling, then squeeze again.

A technique not to be used is pumping the brakes which is no longer considered the most effective technique. Be sure the brakes are adjusted and properly balanced to help avoid skids.

**Following Distance** — Maintain at least twice the normal following distance on snow or ice. Rear-end collisions always are a good percentage of the accidents reviewed by Accident Review Boards during winter months.

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If you are being followed too closely, maintain an extra distance behind the vehicle ahead so that you can slow down or brake gradually. Brake slowly when entering turnarounds while plowing or sanding. It is always possible that a motorist may be using your vehicle as a pilot car, especially during adverse weather conditions.

**Ventilation** — Crack windows for flow-thru ventilation. Be sure that fresh air intake is free of ice and snow.

**Towing** — All employees should be out of both vehicles when hooking or unhooking chains or cables. Use caution when working with chains and cables. Fingers have been crushed and amputated by not heeding this warning.

**Dead Batteries** — When jumping batteries, connect one cable to the (+) terminal of each battery. Then connect one end of the second cable to the (-) terminal of the booster battery and the other end to a nut or bolt on the engine. Do not connect it to the (-) of the discharged battery. Start the engine of the helper vehicle and let it run a few minutes, then start the disabled vehicle engine. Remove cables in the exact REVERSE order.

Always wear eye protection, preferably chemical goggles, when jumping batteries. Batteries can and do explode even when all of the standard procedures are followed. Avoid placing your head directly over either battery.

## Working Habits

**Traffic Vests** — Winter conditions spell out an even greater need for using our traffic vests. Be sure they are clean and readily accessible for use whenever you are exposed to traffic. Traffic vests are washable.

**Hard Hats** — Wear your hard hat when outside of a vehicle. If you should fall and hit your head, the hard

hat can absorb the blow, especially if you also wear a chin strap to keep it from falling off your head.

**Entering and Exiting Equipment** — Do everything necessary to keep steps and running boards free of snow and ice. Be sure to use the hand-holds when getting on or off equipment. Always face the equipment when getting off. Step, don't jump to the ground, and look where you step. Be sure the bottoms of your shoes are free of mud, snow, and ice. A slippery shoe can slip on a brake pedal and change a close call into a collision.

**Walking on Ice or Snow** — After being inside a warm vehicle, the soles of shoes or boots are warm enough to melt snow or ice, thus creating a film of water between the sole and the snow or ice surface. Be especially cautious for the first five minutes after leaving the vehicle. When walking on snow or ice, use short steps and keep your hands out of your pockets. These factors will help you maintain your balance. If you do fall, tuck your arms close to your body and roll with the fall.

It is not possible to cover all of the problems associated with winter conditions in this article. However, your monthly safety meeting will afford you an opportunity to discuss other situations and conditions unique to your area and operations.

Winter conditions call for all the safety know-how we can muster. Let's use that know-how to its fullest capacity and prevent accidents. □

(Mr. Kuester, retired, was WSDOT's Departmental Safety Supervisor)

*Adapted from Winter 1988 NWT<sup>2</sup> "Bulletin"*

## Street Maintenance Waste Disposal

*by Doug Pierce*

A half million dollars was set aside by the 1993 Legislature to develop vactor and street sweeping waste treatment sites. Our current practice of decanting vactor liquids back into the catch basin and disposing the solids and street sweepings is technically a violation of the solid waste regulations and may create environmental problems because of petroleum and metals in the materials. We have been working with Snohomish County, Tacoma, Pierce County and a private developer, the City of Vancouver and Aberdeen to develop multi-user vactor dewatering facilities and ultimately treatment facilities for the solids. We will be contributing half to the construction costs for the Snohomish County facility and have recently constructed an interim facility in Vancouver. A significant monetary contribution is also being made toward construction of a dewatering and drying facility in north Seattle. Developments in Pierce County are much slower due to permit requirements. Within this and next year, we should have several alternatives to our current practices.

*Source: WSDOT Maintenance Information Bulletin, April/May 1995*

# Free Publications

*For Washington recipients only.*

Name

Agency

Address

City and Zip

Phone

## Check those items you would like to order.

- ☐ Unsurfaced Road Maintenance Management, CRREL  
After rating unsurfaced roads, the next steps are covered in this special report by the Corps of Engineers.
- ☐ Highway Utility Guide, FHWA  
Provides the state-of-the-knowledge on the better practices being employed and addresses the issues when highway and utility facilities share a common right of way.
- ☐ Moving with Metric — Metricube, FHWA (1994)  
Foldable cube shows volume, temperature, mass weight, length, and other interesting facts on metric conversion.
- ☐ Metric-English Slide Rule Converter, FHWA
- ☐ Scrap Tire Utilization Technologies, NAPA  
This booklet provides a succinct overview of various uses for scrap tires, barriers to implementation, and sample policy statements on solid waste management of waste tires used in Oregon.
- ☐ State-of-the-Art Survey of Flexible Pavement Crack Sealing Procedures in the United States, CRREL (1992)  
Brief 20-page guide summarizes current methods and materials used by contractors and state departments of transportation for crack sealing on flexible pavements. Advantages and disadvantages are stated.
- ☐ Roadside Improvements for Local Roads and Streets, FHWA  
Brief, well-illustrated guide shows low cost methods of improving and enhancing roadside safety. It is not a design manual.
- ☐ Maintenance of Aggregate and Earth Roads, NWT<sup>2</sup> Center (1994 reprint)  
The fundamentals.
- ☐ Asphalt Seal Coats, NWT<sup>2</sup> Center (1994 reprint)  
The fundamentals.

— Asphalt Pavement Repair Manuals of Practice, SHRP (1994)

Contains two pavement maintenance manuals for use on highway maintenance. Each is a compendium of good practices for asphalt concrete crack sealing and filling and pothole repair.

— Concrete Pavement Repair Manuals of Practice, SHRP (1994)

Contains two manuals for use of highway maintenance people. Covered are the repair of joint seals and the state-of-the-art of rapid repair of partial depth spalls.

— Local Low Volume Roads and Streets Manual, ASCE (1992)

This well organized manual provides local agencies with basic information on planning, design, construction, and maintenance of local low volume roads and streets.

— Geotextile Selection and Installation Manual for Rural Unpaved Roads, FHWA (1989)

A guidebook for selecting and installing geotextiles.

— Guide to Safety Features for Local Roads and Streets, FHWA (1992)

Booklet deals with the construction and maintenance practices that will lead to increased safety.

— Planning, Design, and Maintenance of Pedestrian Facilities, FHWA (1989)

A textbook on the subject.

— Development of a Procedure to Rate the Application of Pavement Maintenance Treatment, SHRP (1992)

A partial printing of a completed SHRP product. This report uses decision trees and summarizes national practices.

— Pavement Management Implementation in Washington's Counties and Selected Cities — A Progress Report

Documents the results of a survey of Washington counties and cities by Grays Harbor County staff regarding pavement management systems, data collection, and use of this information.

— Traffic Conflict Techniques for Safety and Operations

Notebook from the class. Supply is limited.

— Stream Stability and Scour at Highway Bridges

Notebook from the class. Supply is limited.

— Safety Management System

Notebook from the class. Supply is limited.

— Snow Fence Guide, SHRP 1991

Summarizes the results of research conducted by SHRP, as well as other research conducted over the last two decades.

— Handbook for Walkable Communities, by Dan Burden and Michael Wallwork

Textbook from the class "Planning and Design of Pedestrian Facilities."

— Planning and Implementing Pedestrian Facilities in Suburban and Developing Rural Areas (research report), by Burden and Wallwork.

Textbook from the class.

— Traffic Calming, A Guide to Street Sharing, by Michael Wallwork

15-page handout from the pedestrian class.

— Family Emergency Preparedness Plan, American Red Cross, et. al.

Step-by-step guide to disaster planning. (See front page article by Terry Simmonds.)

**Orders may be faxed, mailed, or phoned in to Laurel Gray**

Phone: (360) 705-7386, Fax: (360) 705-6822

Mailing Address: NWT<sup>2</sup> Center, WSDOT/TransAid, PO Box 47390,  
Olympia, WA 98504-7390

## Feds Throw "Flag" on Mechanical Gorillas

Two mechanical gorillas employed as flaggers on a dirt road north of Juneau, Alaska, were retired last spring, days after being put to work on the site because they did not meet federal safety standards. The two mechanical gorilla torsos were perched atop barrels with rotating "stop/slow" paddles to guide traffic. Although motorists obeyed the gorilla flaggers, the devices would have left the state DOT subject to a lawsuit in the event that an accident occurred, according to Jim Merrill, Alaska DOT. The Federal Highway Administration notified the state that the gorillas, which sported fluorescent orange-striped vests and yellow hard hats and gloves, were in violation of federal safety.



## Driving Costs Increase

The average cost of owning and operating a new vehicle rose 1.8 cents to 41.2 cents per mile (1.6 kilometer) this year, according to the American Automobile Association (AAA). The 1995 edition of AAA's "Your Driving Costs" reports increases in vehicle depreciation costs and higher finance charges on new car loans accounts for much of the rise. Fuel, oil, and maintenance rose only slightly, helping to limit the increase. Motorists can expect to pay \$6,185 in 1995 to own and operate a vehicle; this is an increase of \$269, or 4.5 percent from 1994. The cost estimates are based on a four-year, 60,000-mile (100,000-kilometer) ownership period and are a composite national average of three domestically built 1995 cars — a subcompact Ford Escort LX, a mid-size Ford Taurus GL, and a full-size Chevrolet Caprice.

*Source: AAA and Public Roads, Summer 1995*

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## APWA Awards Scholarships

For the 1995-96 school year, the Washington APWA chapter awarded \$1,000 scholarships to the following students majoring in a public related field of engineering at their respective schools. The chapter offers its congratulations to these students. They are a credit to their respective institutions.

Bryan Hicks, Gonzaga University  
Michael Swafford, St. Martin's College  
Rebecca Cushman, Seattle University  
Kyle Pang, University of Washington  
Lowell Walker, Walla Walla College  
David Zike, Washington State University

## ATRBA Safety Manual

According to ARTBA, their Construction Safety Management Manual contains "everything you need to know to improve your safety work practices and managerial skills."

To order send \$79.95 (includes shipping and handling) to: ARTBA Publications, 1010 Massachusetts Avenue, NW, Washington D.C. 20001.

# Opportunities to Enhance Your Skills

For more information or training needs not listed in this bulletin, contact Stan Sanders, T<sup>2</sup> Center Training Coordinator, at (800) 973-4496 or (360) 705-7477

## Classes and Workshops

**Northwest Technology Transfer Center**  
(360) 705-7386, Fax (360) 705-6822

Coming this fall and winter, three National Highway Institute (NHI) classes. Call Laurel Gray in the T<sup>2</sup> Center to indicate your interest or early registration.

- ☐ **Workzone Safety for Maintenance Operations on Rural Highways.** This is a one-day course. Two offerings, one in western and one in eastern Washington. Course fee \$50.
- ☐ **Partnering Concepts.** This is a two-day course: Course fee \$100.
- ☐ **Functional Assessment of Wetlands (ALF).** A three-day overview of wetland regulations. December 5-7. Course fee \$150.

**Washington State Department of Transportation, Staff Development Training Opportunities**  
(360) 705-7386

Call Laurel Gray in the T<sup>2</sup> Center to register.

- ☐ **Plans Preparation (A4J).** Beginning in October. Class includes Contract Special Provision Writing (BGN). No fee. 2 days.
- ☐ **Contract Special Provision Writing (BGN).** Beginning in October. May be taken separate from the Plans Preparation (A4J) course. No fee. 1 day.
- ☐ **Electrical-Illumination and Signals (API).** January 17-18, Seattle; March 13-14, Yakima; April 18-19, Spokane. No fee. 2 days.

- ☐ **Miscellaneous Documentation (ACY).** November 14, Yakima; January 3, April 9, Tacoma; April 10, Seattle. No fee. 1 day.
- ☐ **Bridge Structures Inspection (ACM).** November 28-30, February 6-8, Tacoma; December 5-7, March 19-21, Seattle; January 9-11, Spokane; February 20-22, Yakima. No fee. 3 days.
- ☐ **Excavation and Embankments Inspection (AC3).** November 16, Yakima; December 19, February 15, Spokane; January 4, February 27, Tacoma; March 13, Seattle. No fee. 1 day.
- ☐ **Drainage Inspection (ACF).** February 14, Seattle; January 9, February 28, Tacoma; January 23, February 6, Spokane. No fee. 1 day.
- ☐ **PCC Field Testing Procedures (ABT).** December 12, February 13, March 13, Spokane; March 5, March 6, Yakima; March 7, April 25, Tumwater; April 25, Seattle. No fee. 1 day.
- ☐ **Aggregate Production Inspection (ACA).** December 14, February 8, March 26, Spokane; March 26, Tacoma. No fee. 4 hrs.
- ☐ **Nuclear Gauge, Operator Qualification (ALG).** December 12, Yakima; March 27, Seattle; April 2, Spokane; April 2, May 7, Tacoma. No fee. 1 day.
- ☐ **Asphalt Concrete Pavement Testing Procedures (BG9).** March 6-7, Spokane; March 27-28, Tumwater.  
*Prerequisites:* Nuclear Gauge Operator Qualification (ALG) and Asphalt Plant Inspection course (AYP); bring calculator and dress to test asphalt. No fee. 2 days.
- ☐ **Asphalt Paving Inspection (ACB).** November 8, February 21, Seattle; November 15, Yakima; January 11, April 11, Tacoma; March 8, Spokane. No fee. 4 hours.
- ☐ **Nuclear Gauge, Embankment/Surfacing/Pavement Applications (ANQ).** December 13, Yakima; March 28, Seattle; April 3, Spokane; April 3, May 8, Tacoma. No fee. 1 day.
- ☐ **Nuclear Gauge, Overview for Supervisors (ANE).** December 14, Yakima; April 4, Tacoma; April 24, Seattle. No fee. 4 hrs.
- ☐ **Worksite Traffic Supervisors' Seminar (A42).** December 12-14, Olympia; January 16-18, Spokane. Certification. \$225, plus \$75 for certificate. 3 days.

Continued on page 14

**Professional Engineering Practice Liaison Program (PEPL), University of Washington, College of Engineering**  
(206) 543-5539, Fax (206) 543-2352

- ☐ **Avoidance and Resolution of Construction Delay Claims in Public Works Projects - The Owner's Perspective.** December 7, Shoreline Center, Seattle. \$165, \$190 after 11/22. 1 day.
- ☐ **Successful Negotiation Skills.** November 8, Shoreline Center, Seattle. \$145, \$170 after 10/25. 1 day.
- ☐ **Wetlands Ecology, Protection and Restoration.** November 14-16, Shoreline Center, Seattle. \$435, \$475 after 10/31. 3 days.

**TRANSPEED (Transportation Partnership in Engineering Education Development)**  
(206) 543-5539

- ☐ **Inspection of Existing Culverts.** December 11-12, Pasco; December 13-14, Seattle. \$100, \$225 non-public agency personnel. 1.5 days.
- ☐ **Construction Inspection of Public Works Projects.** November 2-3, Spokane. \$120, \$300 non-public agency personnel. 2 days.
- ☐ **Public Works Construction Project Management.** November 30-December 1, Spokane. \$120, \$300 non-public agency personnel. 2 days.
- ☐ **Basics of Traffic Engineering.** December 11-12, Lacey. \$120, \$300 non-public agency personnel. 2 days.
- ☐ **Roadway Geometric Design.** November 15-17, Lacey. \$160, \$350 non-public agency personnel. 3 days.

**Pacific Lutheran University School of Business Center for Executive Development**  
(206) 535-7330, Fax (206) 535-7333

- ☐ **Survival Skills.** November 1-2, Marriott, Portland, OR. \$595, \$545 for three or more. 2 days.
- ☐ **Project Management.** November 6-7, Marriott, Portland, OR. \$750, \$700 per person for three or more. 2 days.

**Washington State Department of Personnel, Employee Development and Training Program**  
(360) 586-2720

Classes open to state and local agency personnel.

- ☐ **Bi-Polar Seminar.** November 16-17, December 11-12, Olympia. \$155. 2 days.
- ☐ **Bi-Polar Seminar, Advanced.** December 4-5, Olympia. \$150. 2 days.
- ☐ **Serving Difficult Clients.** November 28-29, Olympia. \$80. 2 days.
- ☐ **Interpersonal Conflict Management.** November 8-9, Olympia. \$95. 2 day.
- ☐ **Editing for Clear Writing.** November 6-7, Olympia. \$60. 2 days.
- ☐ **Effective Meeting Management.** November 14, Olympia. \$75. 1 day.
- ☐ **Entry Management Development.** November 6-9, Olympia; November 14-17, Tacoma. 4 days.
- ☐ **Violence in the Workplace.** November 3, Yakima. \$40. 1 day.
- ☐ **Managing Job Stress.** November 6-7, Olympia. \$80. 2 days.

**Department of Retirement Systems**  
(360) 664-3452

- ☐ **Planning For The Rest of My Life - It's Never Too Early!**  
Seminar 1. December 2, Seattle. Information about the Public Employees' Retirement System, Teachers' Retirement Systems, both 1 and 2. For eligible personnel planning retirement in more than five years. No fee. 1 day.
- ☐ **Planning For The Rest of My Life - Here Comes Retirement!**  
Seminar 2. November 17-18, Centralia; December 14-15, Tacoma. Information about the Public Employees' Retirement System, Teachers' Retirement Systems, both 1 and 2. For eligible personnel planning retirement in five years or less. First day runs from 4:00 to 7:30 p.m., second day runs from 8:00 a.m. to 5:00 p.m. *Please plan on attending both days.* No fee. 1.5 days.
- ☐ **Rights and Benefits Workshop.** Information about the Public Employees' Retirement System, Teachers' Retirement Systems, both 1 and 2. No fee. 1.5 hours.  
*November 4, Aberdeen*  
PERS 1, TRS 1, 11:30 a.m. to 1:00 p.m.; PERS 2, TRS 2, 1:15 to 2:30 p.m.  
*November 18, Centralia*  
PERS 1, TRS 1, 11:00 a.m. to 12:30 p.m.; PERS 2, TRS 2, 12:45 to 2:00 p.m.  
*December 2, Seattle*  
PERS 1, TRS 1, 11:30 a.m. to 1:00 p.m.; PERS 2, TRS 2, 1:15 to 2:30 p.m.

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### **December 14-15, Tacoma**

December 14, TRS 1, 6:00 to 7:30 p.m.; December 15, PERS 1, TRS 1, 11:00 a.m. to 12:30 p.m.; PERS 2, TRS 2, 12:45 to 2:00 p.m.

### **Department of Labor and Industries Consultation and Education Program (360) 956-5590**

The following is a listing of free L&I classes scheduled through December 1995. Call L&I for a complete list and to schedule participation.

- ☐ **Confined Space.** December 12, Tukwila. No fee. 3 hours.
- ☐ **Excavation and Trenching.** November 29, Tukwila. No fee. 4 hours.
- ☐ **Fall Protection.** November 19, Tukwila. No fee. 4 hours.
- ☐ **Hazard Communication.** December 6, Tukwila. No fee. 3 hours.

### **American Galvanizers Association (800) 788-4258, Fax (303) 750-2909**

- ☐ **GalvaTech 95, Seminar.** November 7, Portland, OR. \$50. 1 day.

### **Fred Pryor Seminars (800) 255-6139, Fax (913) 722-8585**

- ☐ **Grammar and Usage Seminar.** December 6, Tacoma; December 6, Olympia; December 7, Seattle; December 8, Bellevue; December 12, Everett; December 13, Yakima; December 13, Bellingham; December 14, Pasco; December 15, Spokane. \$125, \$99 each with three or more. 1 day.

### ☐ **How to Make Presentations with Confidence and Power.**

November 1, Bellevue; November 2, Everett; November 7, Yakima; November 8, Pasco; November 8, Olympia; November 9, Spokane. \$199, \$189 each with three or more. 1 day.

- ☐ **The Internet.** November 14, Tacoma; November 15, Seattle; November 15, Bellingham; November 16, Everett; November 16, Bellevue; November 29, Yakima; November 30, Olympia; November 30, Pasco; December 1, Spokane. \$79. 1 day.

- ☐ **Exceptional Customer Service.** December 11, Tacoma; December 12, Seattle; December 13, Bellevue; December 15, Olympia; December 18, Everett; December 19, Yakima; December 19, Bellingham; December 20, Pasco; December 21, Spokane. \$99, \$89 each for five or more. 1 day.

- ☐ **Training the Trainer.** December 4, Yakima; December 5, Pasco; December 6, Spokane; December 7, Bellingham; December 8, Everett; December 19, Tacoma; December 20, Seattle; December 21, Bellevue; December 21, Olympia. \$149, \$139 each for five or more. 1 day.

### **Wells and Bridges, Inc. (513) 237-0112, Fax (513) 236-6101**

- ☐ **How Not to Administer Construction Contracts.** November 17, Seattle; November 20, Tacoma. \$125. 1 day.

## **Conferences and Meetings**

### **Washington State Association of Counties (WSAC) (360) 753-7319, Fax (360) 753-2842**

- ☐ **Legislative Conference.** November 8-10, Semi-ah-moo, Blaine. 3 days.
- ☐ **33rd Annual Road and Street Maintenance Supervisors' School - West Side.** Washington State University (800) 942-4978, Fax (509) 335-0945, November 15-17, Red Lion Hotel, Bellevue. \$170. 3 days.
- ☐ **National Seismic Conference on Bridges and Highways.** Tonya Corporation, FHWA (202) 289-8100, Fax (202) 289-8107, December 10-13, Doubletree Inn - Horton Plaza, San Diego, CA. \$140. 4 days.
- ☐ **Traffic Expo '96 and the 26th Annual ATSSA Convention.** American Traffic Safety Services Association (ATSSA) (540) 898-5400, January 27-29, Convention Center, San Diego, CA. 3 days.
- ☐ **National Association of County Engineers, 1996 Annual Meeting and Management and Technical Conference.** Seattle, February 3-9. 7 days.
- ☐ **National Seismic Conference on Bridges and Highways.** December 10-13, San Diego, CA.

## NW T<sup>2</sup> Advisory Committee

Gary Armstrong, Chairman  
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Randy Hart  
Grants Program Engineer  
County Road Administration Board  
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## Electronic Bulletin Board

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## Fax

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# Bulletin

*The Technology Transfer Center (T<sup>2</sup>) Program is a nationwide effort financed jointly by the Federal Highway Administration (FHWA) and individual state departments of transportation. Its purpose is to translate into understandable terms the latest state-of-the-art technologies in the areas of roads, bridges, and public transportation to local highway and transportation personnel.*

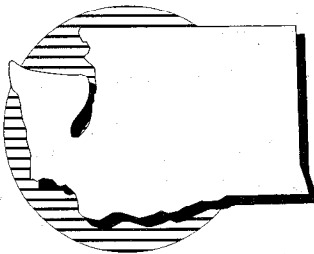
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**Washington State  
Department of Transportation**  
TransAid Service Center



**U. S. Department of Transportation  
Federal Highway Administration**



**Northwest Technology Transfer Center**  
WSDOT-TransAid Service Center  
P.O. Box 47390  
Olympia, WA 98504-7390

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